

## REMARKS

### Information Disclosure Statement

The Examiner indicates that the IDS filed February 5, 2001 has not been considered, apparently because the Examiner did not receive legible copies of all the references. Copies of the references are submitted herewith. Applicants respectfully request that the Examiner consider the prior art cited by Applicants and acknowledge having done so in the next communication to Applicants.

### Rejections under 35 U.S.C. §112

Claims 1-48 and 50 have been rejected under 35 U.S.C. 112, second paragraph. Applicants have amended the claims to address the antecedence issues pointed out by the Examiner, and respectfully request that this rejection be withdrawn.

### Rejections under 35 U.S.C. §102

Of Applicants' independent claims, claims 1, 45, 49 and 50 have been rejected under 35 U.S.C. 102 as anticipated by Northemann, Barman or Hegemann. Independent claim 35 has been rejected as anticipated by Hegemann.

These rejections will be discussed as they pertain to each of Applicant's independent claims.

### Claim 1

Claim 1, as amended, features an oral device that includes, *inter alia*, a head having a pair of elongated arms that include opposed surfaces; a plurality of pairs of opposed cleaning elements, mounted on the opposed surfaces, the cleaning elements being constructed and positioned to be inserted into a user's interproximal regions when the oral device is moved back and forth over the user's teeth, each of the cleaning elements being positioned at an acute angle relative to an interproximal line; and a plurality of pairs of centering elements, mounted on said opposed surfaces and positioned to guide the oral device and center it around a tooth, the centering elements being relatively shorter than the cleaning elements.

None of the cited references teaches or suggests an oral device having centering elements as claimed. Thus, Applicants respectfully submit that claim 1 is allowable over the cited art.

### Claim 35

Claim 35, as amended, features an oral device, constructed to be moved horizontally over teeth of a user with a ratcheting motion. The oral device includes a plurality of pairs of opposed cleaning elements, at least some of which are positioned and dimensioned so that, during the ratcheting motion, they will be flexed towards a distal end of the handle of the oral device during movement in a first direction (see Fig. 4 of Applicants' specification). The cleaning elements will then straighten out until they are substantially perpendicular to the opposed surfaces during movement in a second, opposite direction (see Fig. 4A of Applicants' specification). This movement causes the tips of the cleaning element to wedge between the user's teeth, into the interproximal region.

Neither the Hegemann toothbrush nor the toothbrushes brushes described by the other cited art include cleaning elements that are positioned and dimensioned to provide this type of flexing and straightening motion. Instead, in the Hegemann toothbrush, the bristle tufts flex in a plane perpendicular to the plane of the handle, towards the gumline (Fig. 13).

Thus, claim 35 is not anticipated by Hegemann. Applicants respectfully request that this rejection be withdrawn.

Claim 45

Claim 45 has been cancelled, thereby obviating the rejection as it applies to this claim.

Claim 49

Claim 49 features a method of cleaning between the teeth that includes the steps of:

- (a) positioning the oral device so that the opposed cleaning elements straddle a row of teeth;
- (b) pushing the oral device slowly toward the back of the mouth until each pair of opposed cleaning elements is positioned between two adjacent teeth; and
- (c) pulling the oral device slowly toward the front of the mouth, causing the cleaning elements to wedge into the interproximal region between the adjacent teeth.

These steps are neither taught nor remotely suggested by the cited references. Instead, the cited references describe brushes that are used with a normal brushing motion, at a normal speed. Northemann notes that his brush may be used with a variety of brushing motions, shown in Figs. 5-10 and described at col. 4, lines 22-41. Hegemann explains that his toothbrush is intended to help the user use the standard brushing technique recommended by dentists, and



requires no special technique to use (see, e.g., col. 2, lines 20-49 and col. 3, lines 4-6.) Barman is not concerned with brushing techniques, but instead relates to a process for manufacturing toothbrushes such as those described by Northemann. Thus, the cited references provide no teaching or suggestion of the claimed method, and Applicants respectfully request that this rejection be withdrawn.

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Claim 50

Claim 50 has been cancelled, thereby obviating the rejection as it applies to this claim.

Rejections under 35 U.S.C. §103

Claim 45 has been rejected as obvious over Barman in view of a number of secondary references. This claim has been cancelled, obviating this rejection.

Applicants' dependent claims 14, 15, 17, 19, 20, 23-25, 27-28, 30-32, 44, and 46-48 have been rejected as obvious over various combinations of the primary references with O'Halloran '623, O'Halloran '524, Okin, Cavazza, Watanabe, Shipp, Kramer, Kweon, and Volpenhein. Applicants respectfully submit that these dependent claims are patentable for at least the reasons discussed above with regard to the claims from which they depend. The secondary references do not supply that which is lacking in the primary references as discussed above.

New Claim 61

The cited art, taken alone or in any proper combination, does not teach or suggest the combination of features recited in new claim 61. For example, none of the cited art teaches the use of cleaning elements that include inner, relatively long thin bristles and an outer, relatively shorter supporting structure surrounding the bristles in an oral device that includes pairs of opposed cleaning elements. Applicants have found that this type of cleaning element facilitates penetration of the interproximal region by the opposed elements. The long, thin bristles are sized to penetrate the interproximal region, but alone would have relatively low column strength and thus would generally tend to buckle rather than penetrating. These bristles are supported and prevented from buckling by the surrounding supporting structure, and thus are able to successfully penetrate the interproximal region during the ratcheting action discussed above. (See Applicants' specification, e.g., at p. 11, line 22 - p. 12, line 4.)